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(54) **DETERGENT POUR LAVER LA VAISELLE A LA MAIN CONTENANT DES MICROCAPSULES**

(54) **HAND DISHWASHING DETERGENT CONTAINING MICROCAPSULES**

(57) The intention was to provide an exactly dosable, excellently cleaning, skin-compatible, temperature- and storage-stable, pourable hand dishwashing detergent in which the optionally physically or chemically incompatible or sensitive ingredients are incorporated in temperature-, storage- and transportation-stable, easy-to-handle and optically pleasing form, and which releases these ingredients only directly prior to or during use. This is achieved by a thickened aqueous surfactant-containing composition containing anionic surfactant, amphoteric surfactant, polymer and microcapsules in which one or more ingredients of the hand dishwashing detergent are completely or partially included.

Abstract

The intention was to provide an exactly dosable, excellently cleaning, skin-compatible, temperature- and storage-stable, pourable hand dishwashing detergent in which the optionally physically or chemically incompatible or sensitive ingredients are incorporated in temperature-, storage- and transportation-stable, easy-to-handle and optically pleasing form, and which releases these ingredients only directly prior to or during use. This is achieved by a thickened aqueous surfactant-containing composition containing anionic surfactant, amphoteric surfactant, polymer and microcapsules in which one or more ingredients of the hand dishwashing detergent are completely or partially included.

"Hand dishwashing detergent containing microcapsules"

Field of the Invention

The invention relates to thickened aqueous surfactant-containing compositions, in particular hand dishwashing detergents, containing anionic surfactant, amphoteric surfactant, polymer and microcapsules.

Background of the Invention

Attempts, using traditional means, to incorporate certain active ingredients (inter alia additives which improve the feel on the skin or care additives, such as, for example, liposomes, proteins, vitamins, plant extracts, etc.; performance-enhancing additives, such as, for example, acetic acid, etc.; antibacterial additives, such as, for example, lactic acid, benzoic acid, etc.; aesthetics (in particular additives which improve odor and appearance and tactile properties, such as, for example, perfume oils, dyes, etc.)) in an exactly dosable, excellently cleaning, skin-compatible, temperature- and storage-stable, pourable and ecologically particularly compatible hand dishwashing detergent can - as a result of direct action of the surfactant components on the active ingredient - rapidly lead to losses in activity (e.g. in the case of liposomes). Other problems include difficulties in stably incorporating active ingredients into the detergent formulation (e.g. in the case of perfumes or antibacterial active ingredients), discolorations (e.g. in the case of plant extracts or proteins), odor problems (e.g. in the case of the addition of vinegar, antibacterial active ingredients or plant extracts) or incompatibilities between the active ingredient component and the detergent.

An elegant method for incorporating sensitive, chemically or physically incompatible, and volatile ingredients consists in the use of microcapsules in which these ingredients are included in storage- and transportation-stable form, and from which they are

mechanically, chemically, thermally or enzymatically released for or during use.

Microcapsules are finely disperse liquid or solid phases coated with film-forming polymers, during the preparation of which the polymers, following emulsification and coacervation and interfacial polymerization, deposit on the material (active ingredient) to be coated. In the process, the active ingredient is coated by a solid membrane in a type of shell (microcapsule in the narrower sense) or is enclosed by a matrix (microsphere or sphere). In the text below, the term "microcapsule" is used for both variants in the collective sense, or in some cases both terms are placed one after the other. The microscopically small capsules, also called nano-capsules, can be dried like powders. In this way it is possible, for example, to convert petroleum spirit, water, alcohol, pharmaceuticals, solvents, vitamins, enzymes, liquid crystals, food flavorings and perfumes into a dry mass which cannot dry up. Microencapsulation can be used, for example, for perfume powders which are easier to handle and are effective for a longer period than microcapsules.

German Laid-Open Specification **DT 2 215 441** (*Unilever N.V.*) discloses aqueous liquid dishwashing detergents containing 20 to 45% by weight of anionic and/or nonionic surfactants, 3 to 10% by weight of electrolyte and capsules having a diameter of 1 to 4000 µm of the polymers carrageenan, polyvinyl alcohol or cellulose ethers, where the polymers and the electrolyte concentration are chosen such that the stability of the capsules in the composition and also dissolution of the capsules upon dilution with water are ensured. Such a dishwashing detergent comprises, for example, 10% by weight of capsules having a diameter of 4000 µm, 25% by weight of sodium dodecylbenzenesulfonate, 5% by weight of cocomonoethanolamide, 7% by weight of sodium

sulfate, 1.5% by weight of synthetic clay, or 5% by weight of capsules having a diameter of 4000 µm, 20% by weight of sodium alkylbenzenesulfonate, 5% by weight of sodium C_{14-16}-α-olefinsulfonate, 5% by weight of lauric acid diethanolamide, 7% by weight of sodium xylenesulfonate, 3% by weight of ethanol, 1% by weight of potassium chloride, 1% by weight of synthetic clay and 0.2% by weight of EDTA.

DE 36 15 514 A1 (*Lion Corp.*) discloses an aqueous hand dishwashing detergent containing 22% by weight of sodium α-olefinsulfonate, 6% by weight of magnesium alkylbenzenesulfonate, 2% by weight of sodium sulfate, 0.725% by weight of sodium chloride, 3% by weight of ethanol, 0.5% by weight of fragrance and 1.5% by weight of fragrance-containing microcapsules having a size of from 200 to 500 µm, which dissolve upon dilution with water.

British Patent Specification **1 471 406** (*Unilever Ltd.*) relates to liquid aqueous detergents which comprise at least 2% by weight of triethanolamine lauryl sulfate and a total of from 8 to 50% by weight of surfactant, and 0.5 to 2% by weight of water-soluble crosslinked polyacrylic acid having a molecular weight of more than 1,000,000 and 0.1 to 5% by weight of a suspended phase, e.g. spheroidal capsules having a diameter of from 0.1 to 5 mm, and have a pH of from 5.5 to 11.

Summary of the Invention

The object of the invention was then to provide an exactly dosable, excellently cleaning, skin-compatible, temperature- and storage-stable, pourable hand dishwashing detergent in which the optionally physically or chemically incompatible or sensitive ingredients are incorporated in temperature-, storage- and transportation-stable, easy-to-handle and optically pleasing form, and which releases these ingredients only directly prior to or during use.

The invention provides a thickened aqueous surfactant-containing composition, in particular hand dishwashing detergent, comprising anionic surfactant, amphoteric surfactant, polymer and microcapsules in which one or more ingredients of the composition are completely or partially included.

In contrast to the *ingredients* based on the overall hand dishwashing detergent, the term "*active ingredients*" means merely the fraction thereof present in the microcapsules.

The present invention likewise provides for the use of the composition according to the invention as hand dishwashing detergent.

As well as crockery, the composition is, however, equally as effective in cleaning hard surfaces made of glass, ceramic, plastic or metal for domestic and commercial use. Accordingly, the present invention further provides for the use of the composition according to the invention as a hard-surface cleaner.

The combination of anionic surfactant and amphoteric surfactant on the one hand brings about a particularly advantageous cleaning action, and on the other hand, in conjunction with the polymer, effects a spatially particularly stable suspension of the microcapsules. The otherwise customary use of relatively large amounts of electrolyte salt for stabilizing the microcapsules is therefore not necessary. Visible microcapsules permit particularly accurate, reproducible dosing by counting out the microcapsules present in the metered amount of hand dishwashing detergent.

Unless stated otherwise, for the purposes of the present invention, fatty acids or fatty alcohols or derivatives thereof are representative of branched or unbranched carboxylic acids or alcohols or derivatives

thereof respectively having, preferably, from 6 to 22 carbon atoms. Because of their vegetable base and because they are based on renewable raw materials, the first-mentioned are preferred for ecological reasons, without, however, the teaching according to the invention being limited thereto. In particular, the oxo alcohols, obtainable, for example, according to the *ROELEN* oxo synthesis, or derivatives thereof can, accordingly, also be used.

Whenever the text below mentions alkaline earth metals as counterions for monovalent anions, this means that the alkaline earth metal is of course present only in half of the amount - i.e. in an amount sufficient to balance the charge - of the anion.

The indication *INCI* means that the designation which follows - or in some cases which precedes - is a name in accordance with the *International Dictionary of Cosmetic Ingredients* from *The Cosmetic, Toiletry, and Fragrance Association (CTFA)*. The indication *CAS* means that the numeral sequence which follows is a designation of the *Chemical Abstracts Service*.

Detailed Description of the Invention

Polymer

Polymers for the purposes of the present invention are polycarboxylates, preferably homo- and copolymers of acrylic acid, in particular acrylic acid copolymers, such as acrylic acid-methacrylic acid copolymers, and polysaccharides, in particular heteropolysaccharides, and other customary polymeric thickeners.

Suitable polysaccharides and heteropolysaccharides are the polysaccharide gums, for example gum arabic, agar, alginate, carrageens and their salts, guar, guaran, tragacanth, gellan, ramsan, dextran or xanthan and their derivatives, e.g. propoxylated guar, and their mixtures. Other polysaccharide thickeners, such as starches or cellulose derivatives, can be used

alternatively, but are preferably used in addition to a polysaccharide gum, for example starches of very different origins and starch derivatives, e.g. hydroxyethyl starch, starch phosphate ester or starch acetates, or carboxymethylcellulose or its sodium salt, methyl-, ethyl-, hydroxyethyl-, hydroxypropyl-, hydroxypropyl-methyl- or hydroxyethyl-methyl-cellulose or cellulose acetate.

A preferred polymer is the microbial anionic heteropoly-saccharide xanthan gum, which is produced from Xanthomonas campestris and some other species under aerobic conditions and has a molecular weight of 2-15 x 10^6 and is available, for example, from *Kelco* under the trade name *Keltrol®*, e.g. as cream-colored powder *Keltrol® T (Transparent)* or as white granules *Keltrol® RD (Readily Dispersible)*.

Suitable acrylic acid polymers are, for example, homopolymers of acrylic acid (*INCI* Carbomer) crosslinked with a polyalkenyl polyether, in particular an allyl ether of sucrose, pentaerythritol or propylene, which are also referred to as carboxyvinyl polymers. Such polyacrylic acids are obtainable inter alia from *BF Goodrich* under the trade name *Carbopol®*, e.g. *Carbopol® 940* (molecular weight about 4,000,000), *Carbopol® 941* (molecular weight about 1,250,000) or *Carbopol® 934* (molecular weight about 3,000,000).

Particularly suitable polymers are, however, the following acrylic acid copolymers: (i) copolymers of two or more monomers from the group of acrylic acid, methacrylic acid and its simple esters, preferably formed with C_{1-4}-alkanols (*INCI* Acrylates Copolymer), to which, for example, the copolymers of methacrylic acid, butyl acrylate and methyl methacrylate (*CAS* 25035-69-2) or of butyl acrylate and methyl methacrylate (*CAS* 25852-37-3) belong and which are available, for example, from *Rohm & Haas* under the trade names *Aculyn®*

and *Acusol®*, e.g. the anionic nonassociative polymers *Aculyn® 33* (crosslinked), *Acusol® 810* and *Acusol® 830* (*CAS* 25852-37-3); (ii) crosslinked high molecular weight acrylic acid copolymers, to which, for example, the copolymers of C_{10-30}-alkyl acrylates, crosslinked with an allyl ether of sucrose or of pentaerythritol, having one or more monomers from the group of acrylic acid, methacrylic acid and its simple esters, preferably formed with C_{1-4}-alkanols (*INCI* Acrylates/C10-30 Alkyl Acrylate Crosspolymer) belong and which are obtainable, for example, from *BFGoodrich* under the trade name *Carpopol®* e.g. the hydrophobicized *Carbopol® ETD 2623* and *Carbopol® 1382* (*INCI* Acrylates/C10-30 Alkyl Acrylate Crosspolymer), and *Carbopol® AQUA 30* (previously *Carbopol® EX 473*).

The content of polymer is customarily between 0.01 and 8% by weight, preferably between 0.1 and 7% by weight, particularly preferably between 0.5 and 6% by weight, in particular between 1 and 5% by weight and most preferably between 1.5 and 4% by weight, for example between 2 and 2.5% by weight. The viscosity of the compositions according to the invention is essentially set or controlled via the polymer content, the required amount varying from polymer to polymer. The surfactant composition used also plays a role in the choice of amount.

Surfactants

As surfactants, the hand dishwashing detergent according to the invention comprises a combination of at least one anionic surfactant and at least one amphoteric surfactant. In a particular embodiment of the invention, at least one nonionic surfactant is additionally present. Overall, the surfactants are customarily used in amounts of from 0.2 to 60% by weight, preferably from 1 to 55% by weight, particularly preferably 3 to 50% by weight and most preferably 5 to 45% by weight.

In one embodiment which is preferable for the relatively high use concentration of, for example, about 0.8 g of the composition according to the invention per liter of wash liquor, the surfactant content is customarily 5 to 35% by weight, preferably 10 to 30% by weight, in particular 14 to 25% by weight.

In a concentrated embodiment which is preferable for a relatively low use concentration of, for example, about 0.4 g of the composition according to the invention per liter of wash liquor, the surfactant content is, by contrast, customarily 30 to 60% by weight, preferably 35 to 55% by weight, in particular 38 to 52% by weight.

Anionic surfactants

Anionic surfactants according to the invention can be aliphatic sulfates, such as fatty alcohol sulfates, fatty alcohol ether sulfates, dialkyl ether sulfates, monoglyceride sulfates and aliphatic sulfonates, such as alkanesulfonates, olefinsulfonates, ether sulfonates, *n*-alkyl ether sulfonates, ester sulfonates and lignin sulfonates. For the purposes of the present invention, use can also be made of alkylbenzene-sulfonates, fatty acid cyanamides, sulfosuccinic esters, fatty acid isethionates, acylaminoalkane-sulfonates (fatty acid tauride), fatty acid sarcosinates, ether carboxylic acids and alkyl (ether) phosphates.

For the purposes of the present invention, particular preference is given to fatty alcohol ether sulfates. Fatty alcohol ether sulfates are products of sulfating reactions with alkoxylated alcohols. In this connection, the person skilled in the art generally understands by the term "alkoxylated alcohols" the reaction products of alkylene oxide, preferably ethylene oxide, with alcohols, for the purposes of the present invention, preferably with longer-chain

alcohols. Generally, *n* moles of ethylene oxide and one mole of alcohol form, depending on the reaction conditions, a complex mixture of addition products of varying degrees of ethoxylation. A further embodiment of the alkoxylation consists of the use of mixtures of the alkylene oxides, preferably the mixture of ethylene oxide and propylene oxide. For the purposes of the present invention, very particular preference is given to fatty alcohols with a low degree of ethoxylation having from 1 to 4 ethylene oxide units (EO), in particular 1 to 2 EO, for example 1.3 EO.

Preferably, the anionic surfactants, in particular fatty alcohol ether sulfates, are used in amounts of from 0.2 to 49.8% by weight, particularly preferably 5 to 45% by weight, in particular 8 to 40% by weight and most preferably 10 to 36% by weight.

In a particular embodiment of the teaching according to the invention, the composition comprises, as the sole anionic surfactant or, preferably, as an additional anionic surfactant, in particular in combination with fatty alcohol ether sulfates, fatty alcohol sulfates, where, preferably, between 0.5 and 15% by weight of fatty alcohol sulfates are present.

Amphoteric surfactants

Amphoteric surfactants (zwitterionic surfactants) which can be used according to the invention include betaines, amine oxides, alkylamidoalkylamines, alkyl-substituted amino acids, acylated amino acids and biosurfactants, of which the betaines are particularly preferred within the meaning of the teaching according to the invention.

Betaines

Suitable betaines are the alkylbetaines, the alkyl-amidobetaines, the imidazoliniumbetaines, the sulfo-

betaines (*INCI* Sultaines) and the phosphobetaines and preferably satisfy formula I,

$$R^1-[CO-X-(CH_2)_n]_x-N^+(R^2)(R^3)-(CH_2)_m-[CH(OH)-CH_2]_y-Y^- \quad (I)$$

in which R^1 is a saturated or unsaturated C_{6-22}-alkyl radical, preferably C_{8-18}-alkyl radical, in particular a saturated C_{10-16}-alkyl radical, for example a saturated C_{12-14}-alkyl radical,

X is NH, NR^4 with the C_{1-4}-alkyl radical R^4, O or S,

n is a number from 1 to 10, preferably 2 to 5, in particular 3,

x is 0 or 1, preferably 1,

R^2, R^3 independently of one another are a C_{1-4}-alkyl radical, optionally hydroxy-substituted, such as, for example, a hydroxyethyl radical, but in particular a methyl radical,

m is a number from 1 to 4, in particular 1, 2 or 3,

y is 0 or 1 and

Y is COO, SO_3, $OPO(OR^5)O$ or $P(O)(OR^5)O$, where R^5 is a hydrogen atom H or a C_{1-4}-alkyl radical.

The alkyl- and alkylamidobetaines, betaines of the formula I containing a carboxylate group (Y^- = COO^-) are also called carbobetaines.

Preferred amphoteric surfactants are the alkylbetaines of the formula (Ia), the alkylamidobetaines of the formula (Ib), the sulfobetaines of the formula (Ic) and the amidosulfobetaines of the formula (Id),

$$R^1-N^+(CH_3)_2-CH_2COO^- \quad (Ia)$$

$$R^1-CO-NH-(CH_2)_3-N^+(CH_3)_2-CH_2COO^- \quad (Ib)$$

$$R^1-N^+(CH_3)_2-CH_2CH(OH)CH_2SO_3^- \quad (Ic)$$

$$R^1-CO-NH-(CH_2)_3-N^+(CH_3)_2-CH_2CH(OH)CH_2SO_3^- \quad (Id)$$

in which R^1 has the same meaning as in formula I.

Particularly preferred amphoteric surfactants are the carbobetaines, in particular the carbobetaines of the formula (Ia) and (Ib), most preferably the alkylamidobetaines of the formula (Ib).

Examples of suitable betaines and sulfobetaines are the following compounds named in accordance with *INCI*: Almondamidopropyl Betaine, Apricotamidopropyl Betaine, Avocadamidopropyl Betaine, Babassuamidopropyl Betaine, Behenamidopropyl Betaine, Behenyl Betaine, Betaine, Canolamidopropyl Betaine, Capryl/Capramidopropyl Betaine, Carnitine, Cetyl Betaine, Cocamidoethyl Betaine, Cocamidopropyl Betaine, Cocamidopropyl Hydroxysultaine, Coco-Betaine, Coco-Hydroxysultaine, Coco/Oleamidopropyl Betaine, Coco-Sultaine, Decyl Betaine, Dihydroxyethyl Oleyl Glycinate, Dihydroxyethyl Soy Glycinate, Dihydroxyethyl Stearyl Glycinate, Dihydroxyethyl Tallow Glycinate, Dimethicone Propyl PG-Betaine, Erucamidopropyl Hydroxysultaine, Hydrogenated Tallow Betaine, Isostearamidopropyl Betaine, Lauramidopropyl Betaine, Lauryl Betaine, Lauryl Hydroxysultaine, Lauryl Sultaine, Milkamidopropyl Betaine, Minkamidopropyl Betaine, Myristamidopropyl Betaine, Myristyl Betaine, Oleamidopropyl Betaine, Oleamidopropyl Hydroxysultaine, Oleyl Betaine, Olivamidopropyl Betaine, Palmamidopropyl Betaine, Palmitamidopropyl Betaine, Palmitoyl Carnitine, Palm Kernelamidopropyl Betaine, Polytetrafluoroethylene Acetoxypropyl Betaine, Ricinoleamidopropyl Betaine, Sesamidopropyl Betaine, Soyamidopropyl Betaine, Stearamidopropyl Betaine, Stearyl Betaine, Tallowamidopropyl Betaine, Tallowamidopropyl Hydroxysultaine, Tallow Betaine, Tallow Dihydroxyethyl Betaine, Undecylenamidopropyl Betaine and Wheat Germamidopropyl Betaine.

Amine oxides

The amine oxides which are suitable according to the invention include alkylamine oxides, in particular alkyldimethylamine oxides, alkylamidoamine oxides and alkoxyalkylamine oxides. Preferred amine oxides satisfy formula II,

$$R^6R^7R^8N^+-O^- \qquad (II)$$

$$R^6-[CO-NH-(CH_2)_w]_z-N^+(R^7)(R^8)-O^- \qquad (II)$$

in which R^6 is a saturated or unsaturated C_{6-22}-alkyl radical, preferably C_{8-18}-alkyl radical, in particular a saturated C_{10-16}-alkyl radical, for example a saturated C_{12-14}-alkyl radical, which is bonded to the nitrogen atom N in the alkylamidoamine oxides via a carbonylamidoalkylene group $-CO-NH-(CH_2)_z-$ and in the alkoxyalkylamine oxides via an oxaalkylene group $-O-(CH_2)_z-$, where z is in each case a number from 1 to 10, preferably 2 to 5, in particular 3,

R^7, R^8 independently of one another are a C_{1-4}-alkyl radical, optionally hydroxy-substituted, such as, for example, a hydroxyethyl radical, in particular a methyl radical.

Examples of suitable amine oxides are the following compounds named in accordance with *INCI*: Almondamidopropylamine Oxide, Babassuamidopropylamine Oxide, Behenamine Oxide, Cocamidopropyl Amine Oxide, Cocamidopropylamine Oxide, Cocamine Oxide, Coco-Morpholine Oxide, Decylamine Oxide, Decyltetradecylamine Oxide, Diaminopyrimidine Oxide, Dihydroxyethyl C8-10 Alkoxypropylamine Oxide, Dihydroxyethyl C9-11 Alkoxypropylamine Oxide, Dihydroxyethyl C12-15 Alkoxypropylamine Oxide, Dihydroxyethyl Cocamine Oxide, Dihydroxyethyl Lauramine

Oxide, Dihydroxyethyl Stearamine Oxide, Dihydroxyethyl Tallowamine Oxide, Hydrogenated Palm Kernel Amine Oxide, Hydrogenated Tallowamine Oxide, Hydroxyethyl Hydroxypropyl C12-15 Alkoxypropylamine Oxide, Isostearamidopropylamine Oxide, Isostearamidopropyl Morpholine Oxide, Lauramidopropylamine Oxide, Lauramine Oxide, Methyl Morpholine Oxide, Milkamidopropyl Amine Oxide, Minkamidopropylamine Oxide, Myristamidopropylamine Oxide, Myristamine Oxide, Myristyl/Cetyl Amine Oxide, Oleamidopropylamine Oxide, Oleamine Oxide, Olivamidopropylamine Oxide, Palmitamidopropylamine Oxide, Palmitamine Oxide, PEG-3 Lauramine Oxide, Potassium Dihydroxyethyl Cocamine Oxide Phosphate, Potassium Trisphosphonomethylamine Oxide, Sesamidopropylamine Oxide, Soyamidopropylamine Oxide, Stearamidopropylamine Oxide, Stearamine Oxide, Tallowamidopropylamine Oxide, Tallowamine Oxide, Undecylenamidopropylamine Oxide and Wheat Germamidopropylamine Oxide.

Alkylamidoalkylamines

The alkylamidoalkylamines (*INCI* Alkylamido Alkylamines) are amphoteric surfactants of the formula (III),

$$R^9\text{-}CO\text{-}NR^{10}\text{-}(CH_2)_i\text{-}N(R^{11})\text{-}(CH_2CH_2O)_j\text{-}(CH_2)_k\text{-}[CH(OH)]_l\text{-}CH_2\text{-}Z\text{-}OM \quad (III)$$

in which R^9 is a saturated or unsaturated C_{6-22}-alkyl radical, preferably C_{8-18}-alkyl radical, in particular a saturated C_{10-16}-alkyl radical, for example a saturated C_{12-14}-alkyl radical,

R^{10} is a hydrogen atom H or a C_{1-4}-alkyl radical, preferably H,

i is a number from 1 to 10, preferably 2 to 5, in particular 2 or 3,

R^{11} is a hydrogen atom H or CH_2COOM (for M see below),

j is a number from 1 to 4, preferably 1 or 2, in particular 1,

k is a number from 0 to 4, preferably 0 or 1,

l is 0 or 1, where k = 1, when l = 1,

Z is CO, SO_2, $OPO(OR^{12})$ or $P(O)(OR^{12})$, where R^{12} is a C_{1-4}-alkyl radical or M (see below), and

M is hydrogen, an alkali metal, an alkaline earth metal or a protonated alkanolamine, e.g. protonated mono-, di- or triethanolamine.

Preferred representatives satisfy the formulae IIIa to IIId,

R^9-CO-NH-$(CH_2)_2$-N(R^{11})-CH_2CH_2O-CH_2-COOM (IIIa)

R^9-CO-NH-$(CH_2)_2$-N(R^{11})-CH_2CH_2O-CH_2CH_2-COOM (IIIb)

R^9-CO-NH-$(CH_2)_2$-N(R^{11})-CH_2CH_2O-$CH_2CH(OH)CH_2$-SO_3M (IIIc)

R^9-CO-NH-$(CH_2)_2$-N(R^{11})-CH_2CH_2O-$CH_2CH(OH)CH_2$-OPO_3HM (IIId)

in which R^{11} and M have the same meaning as in formula (III).

Examples of alkylamidoalkylamines are the following compounds named in accordance with *INCI*: Cocoamphodipropionic Acid, Cocobetainamido Amphopropionate, DEA-Cocoamphodipropionate, Disodium Caproamphodiacetate, Disodium Caproamphodipropionate, Disodium Capryloamphodiacetate, Disodium Capryloamphodipropionate, Disodium Cocoamphocarboxyethylhydroxypropylsulfonate, Disodium Cocoamphodiacetate, Disodium Cocoamphodipropionate, Disodium Isostearoamphodiacetate, Disodium Isostearoamphodipropionate, Disodium Laureth-5 Carboxyamphodiacetate, Disodium Lauroamphodiacetate, Disodium Lauroamphodipropionate, Disodium Oleoamphodipropionate, Disodium PPG-2-Isodeceth-7 Carboxyamphodiacetate, Disodium Stearoamphodiacetate, Disodium Tallowamphodiacetate, Disodium Wheatgermamphodiacetate, Lauroamphodipropionic Acid, Quaternium-85, Sodium Caproamphoacetate, Sodium

Caproamphohydroxypropylsulfonate, Sodium Caproamphopropionate, Sodium Capryloamphoacetate, Sodium Capryloamphohydroxypropylsulfonate, Sodium Caprylo-amphopropionate, Sodium Cocoamphoacetate, Sodium Cocoamphohydroxypropylsulfonate, Sodium Cocoampho-propionate, Sodium Cornamphopropionate, Sodium Isostearoamphoacetate, Sodium Isostearoamphopropionate, Sodium Lauroamphoacetate, Sodium Lauroampho-hydroxypropylsulfonate, Sodium Lauroampho PG-Acetate Phosphate, Sodium Lauroamphopropionate, Sodium Myristoamphoacetate, Sodium Oleoamphoacetate, Sodium Oleoamphohydroxypropylsulfonate, Sodium Oleoampho-propionate, Sodium Ricinoleoamphoacetate, Sodium Stearoamphoacetate, Sodium Stearoamphohydroxy-propylsulfonate, Sodium Stearoamphopropionate, Sodium Tallamphopropionate, Sodium Tallowamphoacetate, Sodium Undecylenoamphoacetate, Sodium Undecyleno-amphopropionate, Sodium Wheat Germamphoacetate and Trisodium Lauroampho PG-Acetate Chloride Phosphate.

Alkyl-substituted amino acids

Alkyl-substituted amino acids (*INCI* Alkyl-Substituted Amino Acids) preferred according to the invention are monoalkyl-substituted amino acids according to formula (IV),

$$R^{13}\text{-NH-CH}(R^{14})\text{-}(CH_2)_u\text{-COOM}' \qquad \text{(IV)}$$

in which R^{13} is a saturated or unsaturated C_{6-22}-alkyl radical, preferably C_{8-18}-alkyl radical, in particular a saturated C_{10-16}-alkyl radical, for example a saturated C_{12-14}-alkyl radical,

R^{14} is a hydrogen atom H or a C_{1-4}-alkyl radical, preferably H,

u is a number from 0 to 4, preferably 0 or 1, in particular 1, and

M' is hydrogen, an alkali metal, an alkaline earth metal or a protonated

alkanolamine, e.g. protonated mono-, di- or triethanolamine,

alkyl-substituted imino acids according to formula (V),

$R^{15}-N-[(CH_2)_v-COOM'']_2$ (V)

in which R^{15} is a saturated or unsaturated C_{6-22}-alkyl radical, preferably C_{8-18}-alkyl radical, in particular a saturated C_{10-16}-alkyl radical, for example a saturated C_{12-14}-alkyl radical,

v is a number from 1 to 5, preferably 2 or 3, in particular 2, and

M'' is hydrogen, an alkali metal, an alkaline earth metal or a protonated alkanolamine, e.g. protonated mono-, di- or triethanolamine, where M'' in the two carboxyl groups can have the same meanings or two different meanings, e.g. hydrogen and sodium or 2 × sodium,

and mono- or dialkyl-substituted natural amino acids according to formula (VI),

$R^{16}-N(R^{17})-CH(R^{18})-COOM'''$ (VI)

in which R^{16} is a saturated or unsaturated C_{6-22}-alkyl radical, preferably C_{8-18}-alkyl radical, in particular a saturated C_{10-16}-alkyl radical, for example a saturated C_{12-14}-alkyl radical,

R^{17} is a hydrogen atom or a C_{1-4}-alkyl radical, optionally hydroxy- or amino-substituted, e.g. a methyl, ethyl, hydroxyethyl or aminopropyl radical,

R^{18} is the radical of one of the 20 natural α-amino acids $H_2NCH(R^{18})COOH$, and

M"' is hydrogen, an alkali metal, an alkaline earth metal or a protonated alkanolamine, e.g. protonated mono-, di- or triethanolamine.

Particularly preferred alkyl-substituted amino acids are the aminopropionates according to formula (IVa),

R^{13}-NH-CH_2CH_2COOM' (IVa)

in which R^{13} and M' have the same meaning as in formula (IV).

Examples of alkyl-substituted amino acids are the following compounds named in accordance with *INCI*: Aminopropyl Laurylglutamine, Cocaminobutyric Acid, Cocaminopropionic Acid, DEA-Lauraminopropionate, Disodium Cocaminopropyl Iminodiacetate, Disodium Dicarboxyethyl Cocopropylenediamine, Disodium Lauriminodipropionate, Disodium Steariminodipropionate, Disodium Tallowiminodipropionate, Lauraminopropionic Acid, Lauryl Aminopropylglycine, Lauryl Diethylenediaminoglycine, Myristaminopropionic Acid, Sodium C12-15 Alkoxypropyl Iminodipropionate, Sodium Cocaminopropionate, Sodium Lauraminopropionate, Sodium Lauriminodipropionate, Sodium Lauroyl Methylaminopropionate, TEA-Lauraminopropionate and TEA-Myristaminopropionate.

Acylated amino acids

Acylated amino acids are amino acids, in particular the 20 natural α-amino acids, which carry, on the amino nitrogen atom, the acyl radical $R^{19}CO$ of a saturated or unsaturated fatty acid $R^{19}COOH$, where R^{19} is a saturated or unsaturated C_{6-22}-alkyl radical, preferably C_{8-18}-alkyl radical, in particular a saturated C_{10-16}-alkyl radical, for example a saturated C_{12-14}-alkyl radical. The acylated amino acids can also be used as alkali metal salt, alkaline earth metal salt or alkanolammonium

salt, e.g. mono-, di- or triethanolammonium salt. Examples of acylated amino acids are the acyl derivatives listed in accordance with *INCI* under Amino Acids, e.g. Sodium Cocoyl Glutamate, Lauroyl Glutamic Acid, Capryloyl Glycine or Myristoyl Methylalanine.

Preferably, the amphoteric surfactants, in particular alkylamidobetaines, are used in amounts of from 0.1 to 14.9% by weight, in particular from 1 to 10% by weight, most preferably from 1.5 to 8% by weight, for example 2 to 7% by weight.

Nonionic surfactants

For the purposes of the invention, nonionic surfactants can be alkoxylates, such as polyglycol ethers, fatty alcohol polyglycol ethers, alkylphenol polyglycol ethers, terminally capped polyglycol ethers, mixed ethers and hydroxy mixed ethers and fatty acid polyglycol esters. It is also possible to use ethylene oxide, propylene oxide, block polymers and fatty acid alkanolamides and fatty acid polyglycol ethers. An important class of nonionic surfactants which can be used according to the invention are the polyol surfactants, particularly the glycosurfactants, such as alkyl polyglycosides and fatty acid glucamides. Particular preference is given to alkyl polyglycosides, in particular the alkyl polyglucosides.

Alkyl polyglycosides are surfactants which can be obtained by reacting sugars and alcohols according to appropriate processes of preparative organic chemistry, a mixture of monoalkylated, oligomeric or polymeric sugars resulting depending on the nature of the preparation. Preferred alkyl polyglycosides are the alkyl polyglucosides, where the alcohol is particularly preferably a long-chain fatty alcohol or a mixture of long-chain fatty alcohols having branched or unbranched C_8- to C_{18}-alkyl chains, and the degree of oligomerization (DP) of the sugars is between 1 and 10,

preferably 1 to 6, in particular 1.1 to 3, most preferably 1.1 to 1.7.

Preferably, one or more nonionic surfactants, in particular alkyl polyglycosides, are used in amounts of from 0.1 to 14.9% by weight, in particular 1 to 10% by weight and most preferably 1.5 to 5% by weight, for example 2 to 3% by weight.

In a preferred embodiment of the invention the hand dishwashing detergent comprises

(a) 0.2 to 49.8% by weight, preferably 5 to 45% by weight, particularly preferably 8 to 40% by weight, of anionic surfactants, in particular fatty alcohol ether sulfates,

(b) 0.1 to 14.9% by weight, preferably 1 to 10% by weight, of amphoteric surfactants, in particular alkylamidobetaines, and

(c) 0.1 to 14.9% by weight, preferably 1 to 10% by weight, of nonionic surfactants, in particular alkyl polyglucosides.

Microcapsules

The microcapsules which can be used are any of the surfactant-stable capsules and capsule materials or spheres and sphere materials offered on the market, such as, for example, Hallcrest microcapsules (capsule material: gelatin, gum arabic) from *Hallcrest, Inc.* (US), Coletica thalaspheres (capsule material: maritime collagen) from *Coletica* (FR), Lipotec millicapsules (capsule material: alginic acid, agar agar) from *Lipotec S.A.* (ES), Induchem unispheres (capsule material: lactose, microcrystalline cellulose, hydroxypropylmethylcellulose) and Unicerin C30 (capsule material: lactose, microcrystalline cellulose, hydroxypropylmethylcellulose) from *Induchem AG* (CH), Kobo glycospheres (capsule material: modified starch, fatty acid esters, phospholipids) and soft spheres (capsule material: modified agar agar) from *Kobo* (US),

and Kuhs Probiol nanospheres (capsule material: phospholipids) from *Kuhs* (DE) and others.

The microcapsules can have any desired form within the framework defined by the preparation, but are preferably egg-shaped or ellipsoid or, more accurately, spherical. The diameter along their greatest spatial extension can be between 100 nm (not visually recognizable as capsules) and 10 mm, depending on the active ingredient and application. The preferred diameter is in the range between 0.1 mm and 7 mm, particular preference being given to microcapsules having a diameter between 0.4 mm and 5 mm.

For the purposes of the invention, active ingredients are, inter alia, dermatologically effective substances, such as vitamin A, vitamin B2, vitamin B12, vitamin C, vitamin E, D-panthenol, sericin, collagen partial hydrolysate, various vegetable protein partial hydrolysates, protein hydrolysate fatty acid condensates, liposomes, cholesterol, vegetable and animal oils, such as, for example, lecithin, soya oil, etc., plant extracts, such as, for example, Aloe Vera, azulene, hamamelis extracts, algae extracts, etc., allantoin, A.H.A. complexes. For the purposes of the invention, active ingredients are additionally antibacterial active ingredients, such as, for example, benzoic acid, lactic acid, salicylic acid, sorbic acid or mixtures thereof or salts thereof. For the purposes of the invention, active ingredients are also essential oils, such as, for example, perfumes, limonene, geraniol, nerol, and additives for improving the ware shine, such as, for example, vinegar. To improve the appearance, dyes, colored pigments or pearlizing components are mixed in.

Accordingly, in a preferred embodiment, the hand dishwashing detergent according to the invention comprises microcapsules in which one or more

representatives from the group consisting of dermatologically active substances, antibacterial active ingredients, essential oils and additives for improving the ware shine and the appearance are included.

The active ingredient can be released from the microcapsules either as a result of the microcapsules rubbing together during the cleaning process, or else as a result of rupture using a suitable dosing device. It is also conceivable that the active ingredient is released by changing the temperature (introduction into warm wash liquor), by shifting the pH, or by changing the electrolyte content, etc.

The content of microcapsules is customarily from 0.01 to 10% by weight, preferably from 0.1 to 5% by weight, in particular from 0.2 to 3% by weight and most preferably from 0.3 to 2% by weight, where the composition according to the invention can comprise exclusively microcapsules of the same type, or else mixtures of different types of microcapsules.

Viscosity

The viscosity which is favorable for the compositions according to the invention is, at 20°C and a shear rate of 10 s^{-1}, between 300 and 20,000 mPa·s, preferably between 700 and 15,000 mPa·s, particularly preferably between 1000 and 10,000 mPa·s, or, at 20°C and a shear rate of 30 s^{-1}, between 500 and 18,000 mPa·s, preferably between 700 and 13,000 mPa·s, particularly preferably between 900 and 10,000 mPa·s, in particular between 1100 and 8000 mPa·s, most preferably between 1300 and 6500 mPa·s, for example between 1000 and 4000 mPa·s.

Zero shear viscosity η_0 values preferred for favorable storage properties are between 100 and 5000 Pa·s, preferably between 200 and 3000 Pa·s.

Many of the mixtures investigated according to the invention exhibit a viscosity profile which changes with time. This is particularly desirable since during the production process, a low-viscosity mass is preferred, but with regard to storage stability and use comfort importance is placed on products of higher viscosity.

The viscosity of the compositions according to the invention can be adjusted by the polymer. The required amounts can be different from polymer to polymer. The surfactant composition used likewise plays a role in the choice of quantity, as does the presence of solubilizers.

Solubilizers

The solubilizers, for example for dyes and perfume oils, can, for example, be alkanolamines, polyols, such as ethylene glycol, 1,2-propylene glycol, glycerol and other mono- and polyhydric alcohols, and alkylbenzene-sulfonates having from 1 to 3 carbon atoms in the alkyl radical.

To stabilize the hand dishwashing detergent according to the invention, particularly if the surfactant content is high, it is possible to add one or more dicarboxylic acids and/or salts thereof, alone or in a mixture, in particular a composition of Na salts of adipic, succinic and glutaric acid in admixture, as is available, for example, under the trade name *Sokalan® DSC*. They are advantageously used in amounts of from 0.1 to 8% by weight, preferably 0.5 to 7% by weight, in particular 1.3 to 6% by weight and particularly preferably 2 to 4% by weight.

A change in the dicarboxylic acid (salt) content can - in particular in amounts above 2% by weight - contribute to a clear solution of the ingredients. Likewise, within certain limits, it is possible to

influence the viscosity of the mixture by virtue of this agent. Furthermore, this component influences the solubility of the mixture. This component is particularly preferably used at high surfactant contents, in particular at surfactant contents above 30% by weight.

Instead of or in addition to the dicarboxylic acids and/or salts thereof, it is possible, to regulate the viscosity, to also use other organic acids or salts thereof, such as, for example, sodium formate, sodium acetate, sodium citrate and sodium tartrate, and inorganic salts, such as, for example, sodium chloride, magnesium chloride and magnesium sulfate, and also salts of the abovementioned anions with other alkali metals or alkaline earth metals individually or in mixtures.

Solvents

A further advantageous component of the compositions according to the invention are solvents, in particular lower alcohols, preferably ethanol, *n*-propanol or *iso*propanol, particularly preferably ethanol. They contribute to the incorporation of perfume and dye, prevent the formation of liquid-crystalline phases and participate in the formation of clear products. The viscosity can be reduced by increasing the amount of solvent. However, too much solvent brings about too great a decrease in the viscosity. For this reason, according to the invention, one or more solvents are customarily present in amounts of from 0.1 to 12% by weight, preferably 1 to 10% by weight, particularly preferably 3 to 8% by weight, for example 5 to 6% by weight.

Auxiliaries and additives

A further improved cleaning performance, particularly in the case of baked on soil, is achieved using abrasive substances, preferably water-soluble abrasive

substances, in particular alkali metal bicarbonate, alkali metal sulfate.

In addition, it is also possible for further auxiliaries and additives customary in hand dishwashing detergents, in particular UV stabilizers, perfume substances, pearlizing agents (*INCI* opacifying agents; for example glycol distearate, e.g. *Cutina® AGS* from *Henkel KGaA*, or mixtures containing this, e.g. the *Euperlane®* from *Henkel KGaA*), dyes, corrosion inhibitors and/or preservatives, in amounts usually not exceeding 5% by weight to be present.

pH

The pH of the compositions according to the invention can be adjusted by means of customary pH regulators, for example citric acid or NaOH, where - essentially because of the required tolerability by the hands - a range from 5 to 8, preferably 5.5 to 7.5, in particular 5.7 to 7 is preferred.

Preparation

The hand dishwashing detergents according to the invention can be prepared by stirring together the individual constituents in any order. The charging order is unimportant for the preparation of the composition.

In this respect, water, surfactants and optionally further ingredients from those mentioned above are preferably stirred together. If perfume and/or dye are used, then these are added to the resulting solution. Finally, the polymer is added, optionally in the form of an aqueous solution in order to facilitate its homogeneous dissolution. The pH is then adjusted as described above and, finally, the microcapsules are mixed in.

Embodiments of the Invention are further described by reference to the following:

Examples

The compositions **E1** to **E16** according to the invention were prepared as described above, and their pH, viscosity and storage stability were determined.

The compositions of the compositions **E1** to **E16** according to the invention in % by weight, and the properties determined are shown in Tables 1 to 3. In addition, a number of compositions **E1** to **E16** according to the invention comprise traces of dye. The pH of the compositions **E1** to **E16** according to the invention was adjusted to values between 5.5 and 7 using citric acid.

The viscosity of the compositions **E1** to **E16** according to the invention was determined at 20°C in accordance with *Brookfield* (*Brookfield LV DV II+* viscometer; spindle 25; rate of rotation 30 min^{-1}).

The stability of the compositions was tested by assessing the compositions visually after storage in each case for four weeks at room temperature of 20°C, at elevated temperature of 40°C, and in the cold at a temperature of 5°C. Irrespective of the storage temperature, none of the compositions exhibited a change which was visually detectable after 4 weeks, and in particular no change in the shape of the capsules or in their spatial distribution within the composition was observed.

Table 1	E1	E2	E3	E4	E5	E6	E7
$C_{12/14}$-alcohol ether sulfate (1.3EO) Na salt	12.0	12.0	18.0	24.0	18.0	15.0	15.0
$C_{12/16}$-alkyl polyglucoside, DP = 1.4	-	-	-	-	3.0	2.5	-
Cocoamidopropylbetaine	2.5	2.5	4.0	6.0	3.0	2.3	3.3
Ethanol	5.0	5.0	5.0	6.0	5.0	5.0	5.0
Perfume	0.35	0.35	0.5	0.6	0.5	0.35	0.35
Polymer (*Aculyn® 33*)	2.0	2.5	2.0	2.0	2.0	2.0	2.3
Microcapsules (*Lipotec Type III*)	0.5	-	-	-	-	-	-
Microcapsules (*Lipotec Type II ML 210*)	-	0.5	-	-	-	-	-
Microspheres (*Unispheres AGE-527*)	-	-	0.2	-	-	-	-
Microspheres (*Unispheres YE-501*)	-	-	-	0.6	-	-	-
Microcapsules (*Lipotec Type I ML 200*)	-	-	-	-	0.5	-	-
Microcapsules (*Hallcrest HC 879*)	-	-	-	-	-	0.3	-
Microcapsules (*Lipotec Type II ML 211*)	-	-	-	-	-	-	0.8
Water *ad*	100	100	100	100	100	100	100
pH	6.2	6.0	6.0	6.0	6.0	6.0	6.1
Viscosity at 20°C [mPa·s]	3500	3400	7300	17,300	9600	5300	5300
Detergency on grease soil I 8 g/l [%]	100	100	113	127	107	105	108
Detergency on grease soil II 8 g/l [%]	89	89	138	164	127	113	113
Detergency on mixed soil 8 g/l [%]	82	82	115	153	118	105	94
Detergency on grease soil I 4 g/l [%]	-	-	95	103	-	-	-
Detergency on grease soil II 4 g/l [%]	-	-	71	89	-	-	-
Detergency on mixed soil 4 g/l [%]	-	-	67	88	-	-	-

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Table 2	E8	E9	E10	E11	E12	E13	E14
$C_{12/14}$-alcohol ether sulfate (2EO) Na salt	-	-	13.8	-	-	-	-
$C_{12/14}$-alcohol ether sulfate (1.3EO) Na salt	12.0	11.7	-	12.0	13.5	12.0	12.0
$C_{12/16}$-alkyl polyglucoside, DP = 1.4	2.0	1.0	3.0	2.0	2.0	-	2
Cocoamidopropylbetaine	1.5	1.5	4.8	1.5	1.3	2.5	1.5
Ethanol	5.0	5.0	5.5	5.0	-	6.0	5.5
Perfume	0.35	0.35	0.2	0.35	0.5	0.35	0.7
Pearlizing compound (*Euperlan® PK 3000*)	-	2.5	2.5	-	-	-	-
Sodium chloride	-	-	-	-	0.7	-	-
Polymer (*Aculyn® 33*)	2.0	2.0	-	-	-	-	-
Polymer (*Acusoll® 830*)	-	-	2.5	-	-	1.5	-
Polymer (*Carbopol® ETD 2623*)	-	-	-	1.0	-	-	-
Polymer (*Carbopol® AQUA 30*)	-	-	-	-	1.5	-	-
Polymer (*Carbopol® 1382*)	-	-	-	-	-	1.0	-
Polymer (*Keltrol® RD*)	-	-	-	-	-	-	2.0
Microcapsules (*Lipotec Type I ML 051*)	0.5	-	-	0.2	-	-	0.8
Microspheres (*Unispheres RE 508*)	-	0.4	-	-	-	-	-
Microcapsules (*Lipotec Type II ML 211*)	-	-	0.6	-	-	-	-
Microspheres (*Unicerin C 30*)	-	-	-	-	0.3	0.3	-
Water *ad*	100	100	100	100	100	100	100
pH	6.1	6.0	5.7	6.6	6.5	6.6	6.5
Viscosity at 20°C [mPa·s]	1400	1500	12,800	4700	6500	640	1000
Detergency on grease soil I 8 g/10 l [%]	96	-	-	96	98	100	96
Detergency on grease soil II 8 g/10 l [%]	87	-	-	87	91	89	87
Detergency on mixed soil 8 g/10 l [%]	76	-	-	76	84	82	76

Table 3	E15	E16
$C_{12/14}$-alcohol ether sulfate (2EO) Na salt	-	-
$C_{12/14}$-alcohol ether sulfate (1.3EO) Na salt	31.5	35.0
$C_{12/16}$-alkyl polyglucoside, DP = 1.4	1.5	7.5
Cocoamidopropylbetaine	7.0	7.5
Dicarboxylic acid mixture *(Sokalan® DCS Na)*	2.0	3.3
Ethanol	5.0	6.0
Perfume	0.7	0.8
Polymer *(Aculyn® 33)*	4.0	2.0
Microspheres *(Unispheres RE 508)*	-	1.5
Microcapsules *(Lipotec Type II ML 211)*	0.8	-
Water *ad*	100	100
pH	6.5	6.5
Viscosity at 20°C [mPa·s]	8000	5000
Detergency on grease soil I 4 g/10 l [%]	109	-
Detergency on grease soil II 4 g/10 l [%]	116	-
Detergency on mixed soil 4 g/10 l [%]	117	-

The microcapsules used were readily visible with the naked eye from a distance of about 0.5 m. The diameter of the microcapsules was 0.8 ± 0.4 mm in formulation **E1**, 2 ± 0.5 mm in formulations **E2**, **E7**, **E10** and **E15**, and 4 ± 0.5 mm in formulations **E5**, **E8**, **E11** and **E14**.

The detergency of the formulations according to the invention was for the most part likewise determined - except for **E9**, **E10** and **E16**. The determination was carried out in a semiautomatic plate test apparatus using two different pure grease soilings I and II or a greasy mixed soiling in a use concentration of 4 and/or 8 g/10 l. For this, at a constant temperature of 40 or 45°C respectively in 5 l of water having a hardness of 16°, plates soiled with the test soil were washed under standard conditions, compared with a high-value classic hand dishwashing detergent as laboratory standard, until the foam - formed before the start of the experiment - had disintegrated and the plates were no

longer clean. The concentration of the composition was 4 or 8 g respectively per liter of water. The number of washed plates is given in Tables 1 to 3 as a percentage relative to a commercially available high-performance hand detergent composition set as 100%, as detergency on the soil in question at the concentration given in each case.

In particular, the compositions **E3** to **E7** and **E15** demonstrate, as a result of their high detergency, the superiority of the hand dishwashing detergents according to the invention.

CLAIMS

1. A thickened aqueous surfactant-containing composition, comprising anionic surfactant, amphoteric surfactant, polymer and microcapsules in which one or more ingredients of the composition are completely or partially included.

2. The composition as claimed in claim 1, which comprises between 0.01 and 10% by weight of microcapsules.

3. The composition as claimed in either of claims 1 and 2, comprising microcapsules having a diameter along their greatest spatial extension of from 100nm to 10mm.

4. The composition as claimed in claim 3, wherein the diameter of said microcapsules is 0.1mm to 7mm along their greatest spatial extension.

5. The composition as claimed in any of claims 1 to 4, additionally comprising microcapsules consisting of one or more of dermatologically effective substances, antibacterial active ingredients, essential oils and additives for improving the ware shine and appearance.

6. The composition as claimed in any one of claims 1 to 5, comprising 0.01 to 8% by weight of polymer.

7. The composition as claimed in claim 6, comprising 0.1 to 7% by weight of polymer.

8. The composition as claimed in claim 7, comprising 0.5 to 6% by weight of polymer.

9. The composition as claimed in claim 8, comprising 1 to 5% by weight of polymer.

10. The composition as claimed in claimed in any one of claims 1 to 9, comprising polymer from the group consisting polycarboxylates and polysaccharides.

11. The composition as claimed in claim10, wherein the polycarboxylate is selected form the group consisting of homo- and copolymers of acrylic acid.

12. The composition as claimed in claim 10 or 11, wherein the polysaccharides are heteropolysaccharides.

13. The composition as claimed in any one of claims 1 to 12, comprising anionic surfactant from the group of aliphatic sulfates, aliphatic sulfonates, alkylbenzenesulfonates, fatty acid cyanamides, sulfosuccinic esters, fatty acid isethionates, acylaminoalkanesulfonates, fatty acid sarcosinates, ether carboxylic acids and alkyl (ether) phosphates.

14. The composition of claim 13, wherein the aliphatic sulfate is selected from the group consisting fatty alcohol sulfates, fatty alcohol ether sulfates, dialkyl ether sulfates and monoglyceride sulfates.

15. The composition of claim 13, wherein the aliphatic sulfonate is selecting from the group consisting of alkanesulfonates, olefinsulfonates, ether sulfonates, *n*-alkyl ether sulfonates, ester sulfonates and lignin sulfonates.

16. The composition of claim 13, wherein the alkyl (ether) phosphate is a fatty alcohol ether sulfate.

17. The composition as claimed in any one of claims 1 to 16, comprising amphoteric surfactants selected from the group of betaines, amine oxides, alkylamido-alkylamines, alkyl-substituted amino acids and acylated amino acids.

18. The composition of claim 17, wherein the acylated amino acid is betaine.

19. The composition of claim 18, wherein the betaine is carbobetaine.

20. The composition as claimed in any one of claims 1 to 19, which additionally comprises at least one nonionic surfactant.

21. The composition as claimed in any one of claims 1 to 20, which comprises alkyl polyglycosides.

22. The composition of claim 21, wherein said alkyl polyglycoside is an alkyl polyglucoside.

23. The composition as claimed in one of claims 1 to 22, which

comprises:

(a) 0.2 to 49.8% by weight of anionic surfactants;

(b) 0.1 to 14.9% by weight of amphoteric surfactants; and

(a) 0.1 to 14.9% by weight of nonionic surfactants.

24. The composition of claim 23, comprising 5 to 45% by weight of anionic surfactants.

25. The composition of claim 24, comprising 8 to 40% by weight of anionic surfactants.

26. The composition of any one of claims 23 to 25, wherein the anionic surfactant is a fatty alcohol ether sulfate.

27. The composition of any one of claims 23 to 26, comprising 1 to 10% by weight of amphoteric surfactants.

28. The composition of claim 27, wherein the amphoteric surfactant is alkyl amidobetaine.

29. The composition of any one of claims 23 to 28, comprising 1 to 10% by weight of nonionic surfactants.

30. The composition of claim 29, wherein said nonionic surfactant is alkyl polyglucoside.

31. The composition as claimed in any one of claims 1 to 30, comprising between 0.5 and 15% by weight of fatty alcohol sulfates.

32. The composition as claimed in any one of claims 1 to 31, comprising a total of 0.2 to 60% by weight of surfactants.

33. The composition of claim 32, comprising a total of 1 to 55% by weight of surfactants.

34. The composition of claim 33, comprising a total of 3 to 50% by weight of surfactants.

35. The composition of claim 34, comprising a total of 5 to 45% by weight of surfactants.

36. The composition as claimed in any one of the claims 1 to 35, comprising one or more solvents.

37. The composition as claimed in claim 36, wherein said solvent(s) is a low molecular weight alcohol.

38. The composition as claimed in claim 36 or 37, wherein said solvent is present in amounts between 0.1 and 12% by weight.

39. The composition as claimed in claim 38, wherein said solvent is present in amounts between 1 and 10% by weight.

40. The composition as claimed in any one of claims 1 to 39, comprising one or more of dicarboxylic acids and/or salts thereof, alone or in a mixture, and/or other organic acids or salts thereof or inorganic salts.

41. The composition as claimed in any one of claims 1 to 40, which has, at 20°C and a shear rate of 30 s^{-1}, a viscosity between 500 and 18,000 mPa·s.

42. The composition as claimed in claim 41, wherein the viscosity is between 700 and 13,000 mPa·s.

43. The composition as claimed in claim 42, wherein the viscosity is between 900 and 10,000 mPa·s.

44. The composition as claimed in any one of claims 1 to 43, comprising further auxiliaries and additives which are customarily in hand dishwashing detergents.

45. The composition as claimed in claim 44, comprising abrasive substances, UV stabilizers, perfume substances, pearlizing agents, dyes, corrosion inhibitors and/or preservatives.

46. The use of a composition as claimed in any one of claims 1 to 45 claimed as a hand dishwashing detergent.

47. The use of a composition as claimed in any one of claims 1 to 45 as a hard-surface cleaner.